

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/092622 A2

- (51) International Patent Classification⁷: **F16K**
- (21) International Application Number:
PCT/US2004/011302
- (22) International Filing Date: 13 April 2004 (13.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/320,105 14 April 2003 (14.04.2003) US
- (71) Applicant (for all designated States except US):
SWAGELOK COMPANY [US/US]; 29500 Solon
Road, Solon, OH 44139 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KOLENC, Ter-**
rence [US/US]; 7065 Constantine Court, Mentor, OH

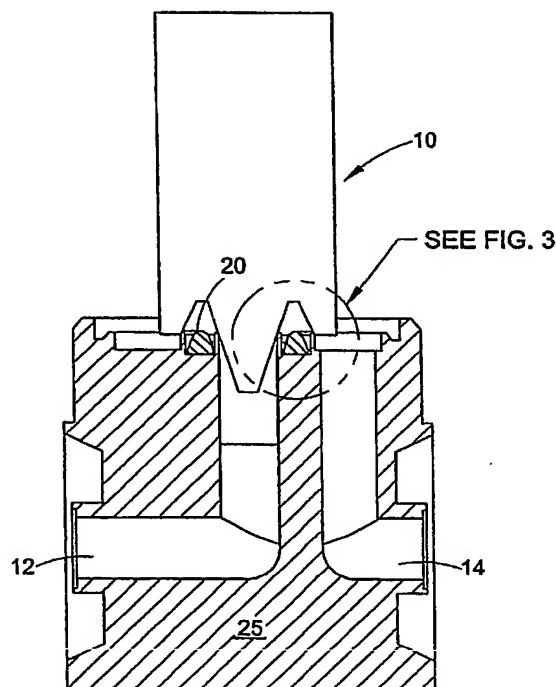
44060 (US). **KUHNS, Howard** [US/US]; 1194 Llyod
Avenue, Aurora, OH 44202 (US). **GLIME, William**
[US/US]; 1296 Bowdoin Road, Painesville Twp. OH
44077 (US). **MEECE, Carl E.** [US/US]; 440 Bentleyville
Road, Moreland Hills, OH 44022 (US). **SCHIROKY,**
Gerhard H. [US/US]; 945 West Parkway Blvd, Aurora,
OH 44202 (US).

(74) Agent: **MCKNIGHT, Douglas, B.**; Calfee, Halter & Gris-
wold LLP, 800 Superior Avenue, Suite 1400, Cleveland,
OH 44114 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

[Continued on next page]

(54) Title: DIAPHRAGM VALVE SEAT



(57) Abstract: A thermally and chemically inert valve seat is provided. The valve seat includes a sharp edge located on the periphery of the valve seat body, wherein the edge digs into a surface within the valve body to secure the valve seat. The valve seat may be case hardened to provide additional strength and sealing ability. The inner diameter of the valve seat may be flush against the valve fluid passageway, thereby decreasing the contact area between the diaphragm and the valve seat.



TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.